

MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on September 27, 1999. Those in attendance were:

Tim Rountree	Assistant State Bridge Design Engineer
Berry Jenkins	Manager of Highway Heavy Division, Carolinas Branch AGC (Co-Chairman)
Ron Shaw	Lee Construction Company of Carolinas
Randall Gattis	Sanford Contractors, Inc.
Larry Cagle	John H. Brinckley, Inc.
Bill Henegar	S. T. Wooten
Ellis Powell	State Bridge Construction Engineer
David Greene	Structural Members Engineer
Nariman Abar	Soils & Foundations Engineer
Rob Woodruff	Structure Design Project Engineer
Rodger Rochelle	Structure Design Project Design Engineer (Secretary)
Paul Lambert	Structure Design Project Engineer
Brian Keaney	Soils and Foundation Engineer

The following items of business were discussed:

1. The minutes of the July 19, 1999 meeting were accepted.
2. *Painting Steel Piles*

Mr. Rochelle distributed a draft Project Special Provision to accommodate the payment of overrun in painting steel piles. The payment will be made on a prorated basis whenever an overrun in painted steel piles occurs. Mr. Gattis stated that the draft document is consistent with the resolution made at the July 19th meeting.

3. *Subsurface Investigation Reports Legends*

Mr. Keaney gave a synopsis of the changes that are being made to the subsurface investigation reports to alleviate confusion, particularly in regards to rock classification. A primary focus of the revisions is to redefine rock according to SPT refusal in lieu of auger refusal. Auger refusal is problematic since it is equipment dependent. Additional descriptive parameters are also being added to the legend to more closely mimic AASHTO standard designations. The draft is within one month of being completed and distributed to industry for additional input. Mr. Abar will provide a draft copy to Mr. Powell and Mr. Jenkins for subsequent distribution to Contractors and drilling Subcontractors.

4. *Armored Evazote Joints*

Mr. Rochelle distributed a proposed new version of the Armored Evazote Joint standard drawing. Mr. Rochelle explained that the new drawing incorporates Committee comments from the July 19th meeting. The blockout width is now shown as a minimum and a leveling tab system has been added for proper alignment of the armor. Notes were revised to allow for the use of an alternate leveling system and to state that no welding will be permitted on the outside face of the armor.

Mr. Shaw inquired as to whether this system may be used on current projects. Mr. Powell confirmed that the system may be used on these projects if proposed by the Contractor. Mr. Woodruff explained that the new 9" anchor stud spacing is based on industry recommendation.

Mr. Shaw asked if there was any cost data available as yet on this new joint system. Mr. Woodruff stated that while no project cost data is available, it is anticipated that the new system will be more expensive. Mr. Powell stated that current projects requiring armored evazote joints are being revised to accommodate the elastomeric concrete blockout and corresponding details. Mr. Lambert stated that, although not required, at least one fabricator is re-submitting shop drawings to include the new details.

5. *Anchor Bolt Shop Drawings*

Mr. Rochelle distributed a copy of a draft Elastomeric Bearing standard drawing which now details anchor bolt requirements. This standard drawing may begin appearing in contracts as early as the February 2000 letting. The material specifications, swedge length, and thread length are now shown on the drawing. This revision negates the need for anchor bolt shop drawings for both prestressed concrete and steel girders on elastomeric bearings. Mr. Lambert stated that fabricator comments on the revision are welcome.

Mr. Shaw asked if certifications on these bolts were required. Mr. Powell stated that a statewide memorandum will be distributed stating that the details are now on the plans. Mr. Lambert suggested, and the committee concurred, that a statement be added to the drawing alerting the fabricator that no shop drawings are required for these anchor bolts and hardware. It was decided that Materials and Test personnel will continue to check the galvanizing of these bolts, where applicable. Mr. Greene requested that an additional note be placed on the drawing alerting the inspectors to this requirement since the shop drawings will no longer be provided. Mr. Gattis stated that the Contractors should take some responsibility in making sure that the bolts are inspected prior to leaving the shop.

vi. *Other*

i. *Pile Hammer Efficiency*

Mr. Gattis reported that even the best hammers do not have the stroke that they claim. Furthermore, it is cost-prohibitive to re-ring these hammers. Therefore, the increased tonnage will require bigger hammers and bigger cranes in some instances.

Mr. Abar distributed a “Hammer Approval Comparison”, revealing the number of pile hammer submittals and subsequent denials since the beginning of 1998. Mr. Abar stated that denials are infrequent as only five (5) submittals of a total 159 were denied. Mr. Gattis and Mr. Cagle emphasized that the biggest problem is encountered with 60 ton capacity on 12 inch steel piles.

Mr. Cagle suggested that making several hammers obsolete may dilute or negate the cost savings enjoyed by reducing the number of required piles by one or two in a project. Mr. Rountree stated that Structure Design will investigate instances where the increase in tonnage may actually decrease economy of the structure.

ii. *Pile Types*

Mr. Gattis inquired about the future use of the standard 16” prestressed concrete pile. Mr. Woodruff stated that a standard drawing now exists for this pile and Mr. Abar confirmed that it could be used rather frequently.

Mr. Abar asked for feedback on the installation of steel pipe piles. Mr. Henegar stated that the open-ended piles drove nicely using a variable D19-32 hammer. Mr. Henegar elaborated on a settling problem that occurred in the concrete within the pile. Mr. Rochelle suggested that future projects with pipe piles incorporate a sand fill capped with a ten foot concrete plug. It was agreed that such a detail should be explored on future projects.

iii. *DBE Regulations*

Mr. Jenkins provided a warning regarding pending DBE regulations that affect the amount of retainage that Contractors may withhold from their Subcontractors. As proposed, Contractors will no longer be able to withhold retainage for work once that work is completed. Therefore, the prime Contractor will be responsible for all completed work until the completion of the project. It appears that the DOT will have no discretion in this matter. Moreover, the retainage proposal would apply to all Subcontractors.

iv. *Fiber Reinforced Concrete Slope Protection*

Mr. Gattis inquired as to the status of the option to use fiber reinforced concrete in lieu of welded wire reinforcing steel in concrete slope protection. Mr. Rochelle stated that the standard drawing for concrete slope protection has been modified to allow for this

option. This drawing is currently under final review and may be effective with the February 2000 letting. Mr. Rochelle further stated that reinforcement details to be used with equal segment lengths and fiber reinforced concrete have been added to the drawing. A horizontal permitted construction joint has also been added. Mr. Powell stated that this option would be considered for current projects. In the interim, Mr. Rochelle will provide Mr. Powell with reinforcement details as needed.

v. *Mr. Gattis Flatters Committee*

Mr. Gattis announced that this meeting will be his last as a member of the Committee. Mr. Jenkins stated that in continuing the revolving membership policy for Contractors, Mr. Gattis will be replaced by Mr. Kevin Burns. Mr. Gattis expressed his appreciation for the Committee's efforts and stated that the Committee was one of the more productive committees. Our best to Mr. Gattis.